This listing of claims will replace all prior versions, and listings of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A respiratory gas exchange monitor, comprising:

a respiratory gas conduit configured to convey inhaled gases and exhaled gases of a subject;

a single respiratory gas flow meter coupled to said respiratory gas conduit, said respiratory gas flow meter being configured to generate an output associated with both a volume of said inhaled gases and a volume of said exhaled gases;

a respiratory gas sensor coupled to said respiratory gas conduit, said respiratory gas sensor being configured to generate an output associated with a concentration of oxygen in said exhaled gases; and

a computation unit coupled to said respiratory gas flow meter and said respiratory gas sensor, said computation unit being configured to process said output of said respiratory gas flow meter and said output of said respiratory gas sensor to determine an amount of carbon dioxide produced by said subject and an amount of oxygen consumed by said subject, said computation unit being configured to determine a respiratory quotient of said subject based on said amount of carbon dioxide produced and said amount of oxygen consumed, wherein said computation unit includes a comparator function to compare said respiratory quotient to a reference respiratory quotient, said comparator function operable to trigger a warning signal in the event that it detects a deviation by a defined amount of said respiratory quotient to said reference respiratory quotient, wherein the warning signal is monitored by a system that is configured to alter a dietary regimen of the subject in an effort to reduce said deviation to within the defined amount in the event that the deviation is due to dietary causes, or to recommend a change in exercise regimen in the event that the deviation is due to excessive physical exertion.

2. (Currently Amended) The respiratory gas exchange monitor of claim 1, wherein said respiratory gas flow meter is an ultrasonic flow meter, wherein said respiratory gas sensor is

an oxygen sensor, and wherein said output of said respiratory gas sensor is further associated with a concentration of oxygen in said inhaled gases.

3. (Currently Amended) The respiratory gas exchange monitor of claim ~~1~~ 2, wherein said ~~respiratory gas sensor is an oxygen sensor~~ respiratory quotient is compared with an analysis of actual nutrition intake of said subject to determine whether said deviation is caused by a condition selected from the group consisting of: inappropriate nutrition intake, metabolic imbalance, pulmonary dysfunction, and recent physical exertion.

4. (Currently Amended) The respiratory gas exchange monitor of claim ~~1~~ 3, wherein said ~~output of said respiratory gas sensor is further associated with a concentration of oxygen in said inhaled gases~~ respiratory quotient is stored in a database, said database configured to store multiple respiratory quotients corresponding to multiple determinations based on respective measurements of amounts of carbon dioxide produced and said amount of oxygen consumed of said subject.

5. (Currently Amended) The respiratory gas exchange monitor of claim ~~1~~ 4, wherein said computation unit is configured to process said output of said respiratory gas flow meter to determine said volume of said inhaled gases and said volume of said exhaled gases, and said computation unit is configured to process said output of said respiratory gas sensor to determine said concentration of oxygen in said exhaled gases.

6. (Previously Presented) The respiratory gas exchange monitor of claim 5, wherein said computation unit is configured to determine said amount of carbon dioxide produced and said amount of oxygen consumed based on said volume of said inhaled gases, said volume of said exhaled gases, said concentration of oxygen in said exhaled gases, and a concentration of oxygen in said inhaled gases.

7. (Previously Presented) The respiratory gas exchange monitor of claim 6, wherein said computation unit is configured to determine said concentration of oxygen in said inhaled gases based on a concentration of oxygen in ambient air.

8. (Previously Presented) The respiratory gas exchange monitor of claim 6, wherein said computation unit is configured to determine said respiratory quotient based on a ratio of said amount of carbon dioxide produced and said amount of oxygen consumed.

9. (Currently Amended) The respiratory gas exchange monitor of claim 1, wherein said ~~computation unit is configured to compare said respiratory quotient with a reference respiratory quotient to determine a measure of deviation of said respiratory quotient with respect to said reference respiratory quotient~~ subject is incapable of self-feeding, and wherein the nutritional requirements are provided by one of enteral administration or parenteral administration based upon automatic periodic measurements of said respiratory quotient.

10. (Currently Amended) The respiratory gas exchange monitor of claim 9, ~~wherein said computation unit is configured to determine said reference respiratory quotient based on a nutrient intake of said subject~~ further comprising a supporting structure configured to attach the respiratory gas exchange monitor to the side of the subject's in a location adjacent to the subject's mouth.

11. (Currently Amended) The respiratory gas exchange monitor of claim ~~1~~ 10, further comprising a display unit coupled to said computation unit, said display unit being configured to provide indicia of said respiratory quotient, and wherein said respiratory quotient is compared to an expected respiratory quotient derived from the multiple respiratory quotients and certain physiological parameters of said subject.

12. (Currently Amended) A respiratory gas exchange monitor, comprising:

a single respiratory gas flow meter configured to generate an output associated with both the inhaled gases and the exhaled gases of a subject;

a respiratory gas sensor configured to generate an output associated with said exhaled gases; and

a computation unit coupled to said respiratory gas flow meter and said respiratory gas sensor, said computation unit being configured to process said output of said respiratory gas flow meter to determine a volume of said inhaled gases and a volume of said exhaled gases, said computation unit being configured to process said output of said respiratory gas sensor to determine a concentration of oxygen in said exhaled gases, said computation unit being configured to determine an amount of carbon dioxide produced by said subject and an amount of oxygen consumed by said subject based on said volume of said inhaled gases, said volume of said exhaled gases, and said concentration of oxygen in said exhaled gases, said computation unit being configured to determine a respiratory quotient of said subject based on a ratio of said amount of carbon dioxide produced and said amount of oxygen consumed, wherein said computation unit includes a comparator function to compare said respiratory quotient to a reference respiratory quotient, said comparator function operable to trigger a warning signal in the event that it detects a deviation by a defined amount of said respiratory quotient to said reference respiratory quotient, wherein the warning signal is monitored by a system that is configured to alter a dietary regimen of the subject in an effort to reduce said deviation to within the defined amount in the event that the deviation is due to dietary causes, or to recommend a change in exercise regimen in the event that the deviation is due to excessive physical exertion.

13. (Previously Presented) The respiratory gas exchange monitor of claim 12, further comprising a respiratory gas conduit configured to convey said inhaled gases and said exhaled gases as said subject breathes, said respiratory gas flow meter and said respiratory gas sensor being coupled to said respiratory gas conduit.

14. (Previously Presented) The respiratory gas exchange monitor of claim 13, wherein said respiratory gas conduit includes a flow tube.

15. (Previously Presented) The respiratory gas exchange monitor of claim 12, wherein said respiratory gas flow meter includes a plurality of ultrasonic transducers.

16. (Previously Presented) The respiratory gas exchange monitor of claim 12, wherein said respiratory gas sensor is a fluorescence quench oxygen sensor.

17. (Currently Amended) The respiratory gas exchange monitor of claim 12, further comprising a ~~display unit coupled to said computation unit, said display unit being configured to provide indicia of said respiratory quotient~~ data store storing multiple respiratory quotients corresponding to multiple determinations based on respective measurements of amounts of carbon dioxide produced and said amount of oxygen consumed of said subject, and wherein said respiratory quotient is compared to an expected respiratory quotient derived from the multiple respiratory quotients and certain physiological parameters of said subject.

18. (Currently Amended) A respiratory gas exchange monitor, comprising:

a single respiratory gas flow meter configured to generate an output associated with both the inhaled gases and the exhaled gases of a subject; and

a computation unit coupled to said respiratory gas flow meter, said computation unit being configured to process said output of said respiratory gas flow meter to determine a volume of said inhaled gases, a volume of said exhaled gases, and a mass of said exhaled gases, said computation unit being configured to determine an amount of carbon dioxide produced by said subject and an amount of oxygen consumed by said subject based on said volume of said inhaled gases, said volume of said exhaled gases, and said mass of said exhaled gases, said computation unit being configured to determine a respiratory quotient of said subject based on a ratio of said amount of carbon dioxide produced and said amount of oxygen consumed, wherein said computation unit includes a comparator function to compare said respiratory quotient to a reference respiratory quotient, said comparator function operable to trigger a warning signal in the event that it detects a deviation by a defined

amount of said respiratory quotient to said reference respiratory quotient, wherein the warning signal is monitored by a system that is configured to alter a dietary regimen of the subject in an effort to reduce said deviation to within the defined amount in the event that the deviation is due to dietary causes, or to recommend a change in exercise regimen in the event that the deviation is due to excessive physical exertion..

19. (Previously Presented) The respiratory gas exchange monitor of claim 18, further comprising a respiratory gas conduit configured to convey said inhaled gases and said exhaled gases as said subject breathes, said respiratory gas flow meter being coupled to said respiratory gas conduit.

20. (Previously Presented) The respiratory gas exchange monitor of claim 18, wherein said respiratory gas conduit includes a flow tube.

21. (Previously Presented) The respiratory gas exchange monitor of claim 18, wherein said respiratory gas flow meter includes a plurality of ultrasonic transducers.

22. (Previously Presented) The respiratory gas exchange monitor of claim 18, wherein said computation unit is configured to determine a mass of carbon dioxide and oxygen in said exhaled gases based on said mass of said exhaled gases and a mass of nitrogen in said exhaled gases.

23. (Previously Presented) The respiratory gas exchange monitor of claim 22, wherein said computation unit is configured to determine said mass of nitrogen in said exhaled gas based on a concentration of nitrogen in ambient air.

24. (Previously Presented) The respiratory gas exchange monitor of claim 22, wherein said computation unit is configured to determine a concentration of oxygen in said exhaled gases based on said mass of carbon dioxide and oxygen in said exhaled gases, and said computation unit is configured to determine said amount of carbon dioxide produced and said

amount of oxygen consumed based on said volume of said inhaled gases, said volume of said exhaled gases, and said concentration of oxygen in said exhaled gases.

25. (Currently Amended) The respiratory gas exchange monitor of claim 18, further comprising a ~~display unit coupled to said computation unit, said display unit being configured to provide indicia of said respiratory quotient~~ data store storing multiple respiratory quotients corresponding to multiple determinations based on respective measurements of amounts of carbon dioxide produced and said amount of oxygen consumed of said subject, and wherein said respiratory quotient is compared to an expected respiratory quotient derived from the multiple respiratory quotients and certain physiological parameters of said subject.

26. (Currently Amended) A respiratory gas exchange monitor, comprising:

a conduit configured to convey inhaled gases and exhaled gases of a subject;

a first sensor coupled to said conduit, said first sensor being configured to generate a first signal associated with both a volume of said inhaled gases and a volume of said exhaled gases;

a second sensor coupled to said conduit, said second sensor being configured to generate a second signal associated with a concentration of oxygen in said exhaled gases; and

a computation unit coupled to said first sensor and said second sensor, said computation unit being configured to process said first signal and said second signal to determine an amount of carbon dioxide produced by said subject and an amount of oxygen consumed by said subject, said computation unit being configured to determine a respiratory quotient of said subject based on said amount of carbon dioxide produced and said amount of oxygen consumed, said respiratory quotient used to determine the subject's nutritional status, wherein said computation unit includes a comparator function to compare said respiratory quotient to a reference respiratory quotient, said comparator function operable to trigger a warning signal in the event that it detects a deviation by a defined amount of said respiratory quotient to said reference respiratory quotient.

27. (Currently Amended) The respiratory gas exchange monitor of claim 26, wherein said conduit includes a flow tube, said first sensor is an ultrasonic flow meter, and wherein said second sensor is a fluorescence quench oxygen sensor.

28. (Currently Amended) The respiratory gas exchange monitor of claim 26, wherein said ~~first sensor is an ultrasonic flow meter~~ respiratory quotient is compared with an analysis of actual nutrition intake of said subject to determine whether said deviation is caused by a condition selected from the group consisting of: inappropriate nutrition intake, metabolic imbalance, pulmonary dysfunction, and recent physical exertion.

29. (Currently Amended) The respiratory gas exchange monitor of claim ~~26~~ 28, wherein said ~~second sensor is a fluorescence quench oxygen sensor~~ warning signal is monitored by a system that is configured to alter a dietary regimen of the subject in an effort to reduce said deviation to within the defined amount.

30. (Currently Amended) The respiratory gas exchange monitor of claim ~~26~~ 29, wherein said ~~computation unit is configured to compare said respiratory quotient with a reference respiratory quotient to determine a measure of deviation of said respiratory quotient with respect to said reference respiratory quotient~~ subject is incapable of self-feeding, and wherein the nutritional requirements are provided by one of enteral administration or parenteral administration based upon automatic periodic measurements of said respiratory quotient.

31. (Currently Amended) A respiratory gas exchange monitor, comprising:

integral sensor means for determining both a volume of inhaled gases of a subject and a volume of exhaled gases of said subject;

means for determining a concentration of oxygen in said exhaled gases;

means for determining an amount of carbon dioxide produced by said subject and an amount of oxygen consumed by said subject based on said volume of said inhaled gases, said volume of said exhaled gases, and said concentration of oxygen in said exhaled gases; ~~and~~

means for determining a respiratory quotient of said subject based on a ratio of said amount of carbon dioxide produced and said amount of oxygen consumed;

means for comparing said respiratory quotient to a reference respiratory quotient;

means for triggering a warning signal in the event that it detects a deviation by a defined amount of said respiratory quotient to said reference respiratory quotient, wherein said warning signal is monitored by a system that is configured to alter a dietary regimen of the subject in an effort to reduce said deviation to within the defined amount; and

means for causing the automatic provision of nutrition to the subject by one of enteral administration or parenteral administration based upon automatic periodic measurements of said respiratory quotient.

32. (Currently Amended) A respiratory gas exchange monitor, said respiratory gas exchange monitor being configured to perform a method comprising:

determining a volume of inhaled gases and a volume of exhaled gases;

determining a speed of sound in said exhaled gases;

determining an amount of carbon dioxide produced and an amount of oxygen consumed based on said volume of said inhaled gases, said volume of said exhaled gases, and said speed of sound in said exhaled gases; ~~and~~

determining a respiratory quotient based on said amount of carbon dioxide produced and said amount of oxygen consumed;

comparing said respiratory quotient to a reference respiratory quotient;

triggering a warning signal in the event that it detects a deviation by a defined amount of said respiratory quotient to said reference respiratory quotient, wherein said warning signal is monitored by a system that is configured to alter a dietary regimen of the subject in an effort to reduce said deviation to within the defined amount; and

causing the automatic provision of nutrition to the subject by one of enteral administration or parenteral administration based upon automatic periodic measurements of said respiratory quotient.

33. (Currently Amended) A method of determining a respiratory quotient of a subject, comprising:

determining a volume of inhaled gases of said subject and a volume of exhaled gases of said subject in a single gas flow meter;

determining a mass of carbon dioxide and oxygen in said exhaled gases;

determining a concentration of oxygen in said exhaled gases based on said mass of carbon dioxide and oxygen in said exhaled gases;

determining an amount of carbon dioxide produced by said subject and an amount of oxygen consumed by said subject based on said volume of said inhaled gases, said volume of said exhaled gases, and said concentration of oxygen in said exhaled gases; ~~and~~

determining a respiratory quotient of said subject based on said amount of carbon dioxide produced and said amount of oxygen consumed;

comparing said respiratory quotient to a reference respiratory quotient;

analyzing said respiratory quotient in comparison with an actual nutrition intake of said subject to determine whether said deviation is caused by a condition selected from the group consisting of: inappropriate nutrition intake, metabolic imbalance, pulmonary dysfunction, and recent physical exertion;

causing the automatic provision of nutrition to the subject by one of enteral administration or parenteral administration based upon automatic periodic measurements of said respiratory quotient if the deviation is determined to be due to inappropriate nutrition intake; and

alerting the subject to alter exercise patterns if the deviation is determined to be due to recent physical exertion.

34. (Previously Presented) The method of claim 33, wherein determining said mass of carbon dioxide and oxygen in said exhaled gases includes:

determining a mass of said exhaled gases;

determining a mass of nitrogen in said exhaled gases; and

determining said mass of carbon dioxide and oxygen in said exhaled gases based on said mass of said exhaled gases and said mass of nitrogen in said

exhaled gases.